form on the plan is a parallelogram of 212 feet by 126 feet. It is surrounded by an unbroken peristyle of 66 Corinthian columns, supporting an entablature and attic. The peristyle forms a covered gallery, to which the ascent is by a flight of steps extending the whole width of the western front. The intercolumniations on the walls are filled in with two tiers, one above the other, of arched windows, separated by a Doric entablature, and surmounted by a decorated frieze. The roof is formed entirely of iron and copper. In the centre of the parallelogram is the *salle de la bourse*, or great hall, 116 feet long and 76 feet broad, wherein the merchants and brokers assemble. The Doric order is that used, with arcades round the sides, and between the arcades are inscribed the names of the principal mercantile cities in the world. The ceiling is formed by a cove, and in the centre a large skylight serves for lighting the great hall just described. It is rich in sculpture, and decorated with monochrome paintings, to imitate bassi-relievi, 16 in the whole, that is, five on each long, and three on each short, side. They are all allegorical. The hall conveniently contains 2,000 persons."

Sir Christopher Wren was of opinion that an exchange should be formed upon the model of the forum of the ancients, and it is supposed that the basilicæ of the Romans were used for such a purpose. G. R. F.

THAMES EMBANKMENT.

As the commissioners "for the improvement of the metropolis," in spite of the rebuff administered by government to their proposition of an additional coal-tax for defraying the expense of the Thames embankment, have manifested some intention of persevering in that notable project, we recur to their report for the purpose of enabling those of our readers who cannot afford time to examine it for themselves, to judge how far the resolutions of the commissioners respecting the general question of the Thames embankment, and the particular plan selected by them, are consistent with the evidence collected in that voluminous document.

At the close of the report we find the following passage:—

"We have observed with great satisfaction the almost unanimous concurrence in opinion upon all the main topics to which our inquiries were directed among the scientific and professional gentlemen thus consulted; and it was with a corresponding confidence that we finally came to the following resolutions:—

"1. That it appears to the commission that the present state of the river Thames above London-bridge is such as to render highly expedient the adoption of some proceedings for remedying the existing defects, and for preventing the further deterioration of the navigation.

"2. That for securing these important objects, an embankment of the river would be the most effective measure.

"3. That though a general embankment between Vauxhall and London bridges appears to be highly expedient, yet that it is most urgently required on that portion of the Middlesex, or left bank of the river, which lies between Westminster and Blackfriars bridges.

"4. That such an embankment might be advantageously combined with the formation of a carriage and foot-line of communication between Scotland-yard and Blackfriars-bridge, whereby the great objects of public recreation and health would be promoted, and considerable relief be given to the existing insufficient thoroughfares between the eastern and western districts of the metropolis.

"5. That by the adoption of the general principles of embankment presented in the plan of Mr. Page, or plan B (with certain modifications which have been suggested, and others which may be suggested hereafter), there is reason to expect that the great public benefit of the improvement of the river, and the obtaining a new line of communication, may be acquired without detriment to the trade now conducted on the Middlesex shore."

The mention of plan B in the foregoing resolutions requires a few words by way of explanation. It may be necessary to remind our readers, that the inquiry upon which the report was founded was chiefly directed to three distinct plans for the embankment of the Thames, designated by the letters A, B, C. The first of these was proposed by Mr. Walker, the second by Mr. Page, and the third by Mr. Barry, a member of the commission. Plan A contemplated the formation of a continuous line of quays along the Middlesex shore, at the elevation of four feet above high-water mark, with occasional recesses for the accommodation of trade, occupying about one-third of the whole length of the line. Upon this, if deemed expedient, might be constructed a roadway on arches of 100 feet span, crossing the recesses, and accommodating its level to that of the bridges which it was intended to intersect.

In plan B (the one adopted by the commissioners) a very different arrangement is proposed. Its author, Mr. Page (who, by the bye, was acting engineer in the Thames Tunnel), apparently ambitious of producing as useful a work above the surface of the river as his predecessor had made beneath it, has devised a novel and ingenious mode of perambulating the Thames by means of a detached quay, running nearly parallel to the shore, between which and itself a channel is to be left open for the purposes of trade. The quay is to be reserved for the accommodation of the traffic which is expected to be diverted thither from the other thoroughfares of the metropolis, while access to the wharfs on shore will be obtained only through floodgates, established at stated intervals, in the quay itself.

In plan C, to which a very moderate space is assigned in the report, an attempt is made to combine the respective advantages of plans A and B, by constructing a line of solid embankment with narrow slips, extending in shore for the reception of barges.

Let us now proceed to consider how far the report of the commissioners as to "the almost unanimous concurrence in opinion upon all the main topics, among the scientific and professional gentlemen who were consulted," is borne out by their respective evidence. And first, with regard to the question of the necessity and expediency of *any general embankment at all*, we are sorely baffled in our attempts to discover this unanimity of sentiment. On referring to the tabular appendix before mentioned, we find that, out of the eight "scientific and professional gentlemen" consulted, two, viz. Mr. Hartley and Mr. Rennie, do not think an embankment necessary at all. The former states it as his opinion, that the object intended may be accomplished "by dredging, at a much less expense than by a general embankment;" and the latter, that "the object cannot be better accomplished than by a well-organized system of *dredging*." Mr. Macneil speaks of *dredging* in conjunction with *walls* and *embankments*, but says not a word about the necessity of a *general* embankment. Mr. Rendel, though on the whole favourable to an embankment, "does not think it expedient to embank the Surrey side, and disapproves the plans submitted, as each carries the embankment too far." He is of opinion, that, "concurrently with any plan of embankment, it will be absolutely necessary to *dredge* the bed of the river to its proper depth and width." Now considering the very great importance attached by these gentlemen to an uniform system of dredging, we are surprised to find that remedy entirely thrown overboard in the report, or rather treated as a positive evil. Either the authorities in question are good for nothing, or they are very cavalierly treated by the commissioners. As to their unanimity, it is pretty clear on which side that lies. Of the other four gentlemen who are decidedly favourable to a general embankment, Captain Beaufort, hydrographer to the Admiralty, says little or nothing. Mr. Cubitt says, that "a continuous embankment is not absolutely necessary all along both sides of the Thames; . . . nor is it necessary to execute all parts at the same time." On the other hand, Mr. Gordon says, "that embankments on both sides are highly expedient, and should be carried out as part of the same plan, and at the same time." And Mr. Giles, in a still more positive tone, pronounces the embankment "equally necessary on both sides of the river, and" that it "should be executed at one and the same time."

So much for the "*almost unanimous concurrence* of the scientific and professional gentlemen" as to the question of a general embankment. Equally discordant are their opinions upon the next and most important resolution—the particular plan adopted by the Committee.

The evidence as to the relative merits of the respective plans A, B, and C, is classed under the following heads:—

1. As to the effect of each upon the navigation of the river.
2. As to the trade upon the shores.
3. As to the facilities for traffic by land.
4. As to the accumulation of mud.
5. As to the sewerage.

The questions relating to the first head are evidently proposed with a view to elicit as little information as possible respecting plan B, since, with one exception, they have reference only to plans A and C. The answers, however, are very different from what the nature of the questions would have led one to expect. The questions amount to this—whether the operation of plans A and C upon the tidal water of the river would be injurious to the navigation? The answers are five to three to the effect that it would not. Of the other three, only one, that of Mr. Rennie, is decidedly adverse.

The questions involved under the second head are such as can only be satisfactorily answered by persons practically acquainted with the necessities of the trade, and the solution must therefore be sought in another part of the report, where the evidence of those witnesses is given at length. The answers of the scientific and professional gentlemen are as follows:—Captain Beaufort, hydrographer to the Admiralty, and Mr. Giles, are in favour of plan A. The rest are all in favour of plan B, though differing materially as to its application.

Of the wharfingers and lightermen examined on this branch of the subject, the majority are decidedly adverse to the side channel proposed in plan B, which they consider would encroach seriously upon their present accommodation.

The questions under the third head, which relate to the facilities for land communication afforded by the respective plans, are met with a similar diversity of opinion. The general question, it should be observed, is put directly as to A and C, but only indirectly as to B. Of the answers, four are in favour of plan A, three are adverse, and the other equally in favour of all.

On the tendency of each plan to favour the accumulation of mud, which forms the topic of the fourth head, the answers are by no means so unanimous as represented in the report. Of the eight authorities above mentioned, Captain Beaufort, Mr. Cubitt, and Mr. L. Gordon think the same objection applicable to all the plans, but in the greatest degree to plan C. Mr. Macneil is of opinion that the docks or channels in plan B would have a greater tendency to "silt up" than the recesses in plan A; but that in both cases the mud may be easily removed. Mr. Rendel, on the other hand, holds that the channels in plan B will "silt up" the least of the two, but they will require artificial means to keep them clear. Mr. Hartley and Mr. Rennie incline to plan B; while Mr. Giles thinks that both the recesses of plan A and the channels of plan B will be kept clear by the wash of steam-boats and other artificial applications. All doubt upon this point, however, is removed from our minds by the evidence of Mr. Walker, who adduces the most conclusive proofs that no considerable accumulation of mud would take place in the recesses of plan A, and mentions the circumstance that several parties who had objected to the embankment for the new Houses of Parliament on this very score have withdrawn their objections, because they could not substantiate damages.

As the question of sewage is but little affected by any of the proposed plans, we shall cite no evidence on that head. Enough has been said, we think, to shew that, considering the great diversity of sentiment which prevails as to the general expediency, the details, and the consequences of an embankment, as regards the navigation, the trade, and, above all, the safety of the bridges, the Commissioners would act wisely in turning their attention to improvements of a more practical and less questionable character.—*Times*.

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